A LITTLE BOOK FOR EVERY MAN WHO KEEPS A HORSE

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Hugh Cecil Earl of Lonsdale.

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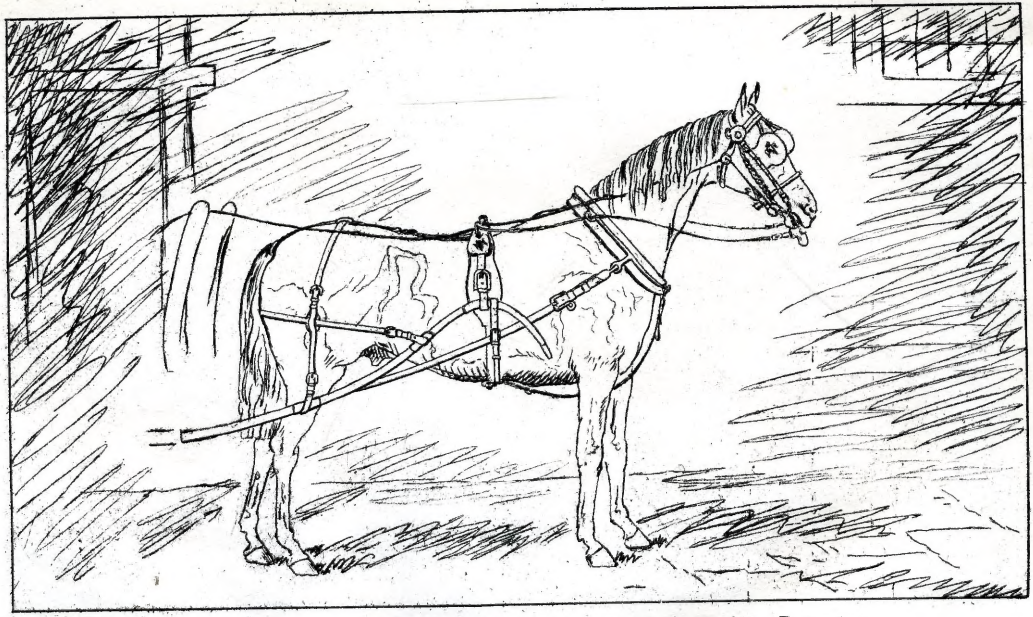
This little book was written to introduce and explain the Author's invention for Improvements in Apparatus for attaching Horses to Carriages, for which he obtained Her Majesty's Patent.



A Horse of upwards of 17 hands in the possession of the Patentee, shewn in the Patent Improved safety Shafts.

A LITTLE BOOK

FOR

Ebery Man who keeps a Horse;

OR,

EASE TO HORSES, AND SAFETY TO DRIVERS, IN SINGLE AND DOUBLE HARNESS.

Dedicated to the Gentlemen of England.

BY LL.D.

LONDON:
SIMPKIN, MARSHALL, & Co., STATIONERS' HALL COURT.
BATH: R. E. PEACH, 8, BRIDGE STREET.

MDCCCLXII.

Third Thousand.]

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INTRODUCTION.

THE following pages were written to introduce and explain my invention for

IMPROVEMENTS IN APPARATUS FOR ATTACHING HORSES TO CARRIAGES,

for which I have obtained Her Majesty's Patent.

I have endeavoured to point out the distress occasioned to horses by the apparatus at present in use, and the manner in which that distress is completely removed by the improvements I have made; and at the end of the book will be found a list of Coach Builders who are at present licensed in different parts of the kingdom to make my Shafts.

Applications from Coach Builders, who wish to become Licensees to make the Shafts, may be made, by letter, to the Patentee, addressed, "LL.D., Post Office, Bath."

Should any person wish to communicate with the Author, his address may be obtained on application to the Publishers, London and Bath.

LL.D.

A LITTLE BOOK, &c.

CHAPTER I.

IMPROBABILITY, WITH MANY PERSONS, OF THE WRITER KNOWING ANYTHING OF THE SUBJECT.

It cannot be a matter of much moment to the public at large who I am, or where I obtained my knowledge of the matters which form the subject of the following pages. Amongst those friends, however, who have known me since I began my professional career, but were unacquainted with my earlier life, and who are already aware whose the patent is which is referred to in the following pages, the question will very naturally arise, "where did this man get his information about such things?" Experience in them is not to be found on the briny element, and it almost amounts to a proverb that a sailor may be known anywhere, if set astride upon a horse.

As an instance of this, when I was about nineteen, little dreaming that I should spend years of my life afloat (for my yacht sailing hitherto, and trips across the channel, had proved me in one respect to be a very bad sailor), I recollect a lieutenant in the navy, after much conversation at the breakfast table about the lameness of his mare, the cause of which he could not discover, saying he must get me, after breakfast, to go out and look at her. Accordingly we repaired to the yard, but as we were crossing to the stable he gave me a glowing account of her performances in the field, and remarked he had hunted her, since he came home on leave, three days in the week with the fox hounds, and three with the harriers. "Well then," I observed, "we need not go any further." "Why, what do you think," he most innocently exclaimed, "is the matter with her?" My friend who had only been accustomed to find the copper on his ship's bottom the brighter from strong weather, seemed never for a moment to have suspected that his mare could not keep going in hard service as well as his ship.

I remember, too, after I had been afloat some time, and had occasion to run our vessel into dock, in a town in my own neighbourhood, for trifling repair, my sailing master, one day on which I had gone up to the town on horseback, proposed, as I was going away and had no groom with me, to bring my horse down from the livery yard where I had left him. I

had some misgivings about letting him go, and it was in vain I urged that the horse was a very high couraged animal. This seemed only to give a zest to the sailor's appetite for a ride, and to increase his desire to be my groom on the occasion. Not long after he left the vessel's side we saw him coming tearing along, his left hand firmly grasping the mane, his right holding on by the cantle of the saddle, and the tiller rope, as he called the rein, dangling about the horse's neck. Here was as brave a seaman as ever walked a deck, or crossed a yard-arm; but when he was fairly on terrâ firmâ again, he wiped the perspiration from his head, and vowed he would never cross such a spar as that again! So much for Jack, out of his element. And now my friends may naturally ask, can I possibly be in my element when I treat of the matters which follow, and when they know I have spent a very large portion of my professional life upon the waters. A word or two therefore for those who know me, in explanation, in the next chapter.

At the same time, I do not for a moment mean to imply that we have none amongst our naval officers who are good horsemen; or that many of our yacht sailors—some of the best horsemen we have in the country—are not good sailors, who would be found "rough and ready," by day and by night, for hard or for smart service, in any part of the world. I merely seek to dispel

the prejudice that may exist in the minds of those friends who have all along fancied I must have had "a liking for the sea," and must from early childhood have been brought up to it; in which case the probability of my knowing anything of the matters treated of in the following pages would be small indeed.

CHAPTER II.

THE WRITER'S EARLY ACQUAINTANCE WITH THE SUBJECT OF WHICH HE TREATS.

THE fact is, (although my friends who have only known me as engaged off our coasts, and who believed I had been brought up a sailor, will be scarcely prepared to receive it) I knew more of these matters from a child, than of ships and nautical affairs.

Early initiated in the saddle, I was soon introduced to the driving box, and before the first vacation of my early school life was over, I "got my hand in" sufficiently to back my horses with a large carriage (and we had no crane necks then) into the coach-house! Each vacation added to my stock of knowledge in this way, and at a well known and then favourite watering place,* amongst the various equipages on the sands might have been seen,

* I should perhaps have said, "watering-place once patronized by the Royal Family;" for, though the royal yacht is not now to be seen in the offing, WEYMOUTH can never fail to be a favourite watering-place. Good bathing, the clearest water, fine sands, its splendid esplanade, and handsome carriage drive, with a bay of

mounted on the high driving box of a close carriage, with the servant in the rumble behind, and therefore having "sole charge," and with a splendid pair of horses, this stripling of less than twelve years—the whole from its novelty, perhaps, attracting daily the special notice of one, whose early removal, a few years afterwards, sent a thrill of the deepest emotion through the whole British empire, and produced such a sense of bereavement in the homes of the people as was never before experienced on the demise of a Royal personage.*

unequalled beauty and magnitude, will ever secure for it rank as the QUEEN OF WATERING-PLACES.

For yacht sailors it is a "Statio bené fida carinis;" presenting for small craft one of the finest bays known, whilst large have the advantage of being at sea at once. A magnificent range of houses, encircling the bay with its esplanade, afford first class accommodation for families; and the "Burdon Hotel," with its wings, forms a noble structure, and imparts a handsome appearance to the whole place. But old or new, the "Royal Hotel," the "Gloucester," or the "Burdon," leave nothing to be desired by the visitor, who will find trains from the north, the east, and the west, ready to convey him to a station, admirably kept out of sight; but emerging from which, as the beautiful bay bursts upon his view, he finds himself in a moment in the *centre* of this grand range of terraces and esplanade.

* This was written about a fortnight before the death of the lamented Prince Consort. Whatever may have been the loss at the time referred to above, the nation has reason to rejoice now in one whose reign may be said to be that of love; whose character has everywhere ennobled British matrons; and who, whilst she commands the admiration of all foreign powers, shines resplendently at home the glory of our land.

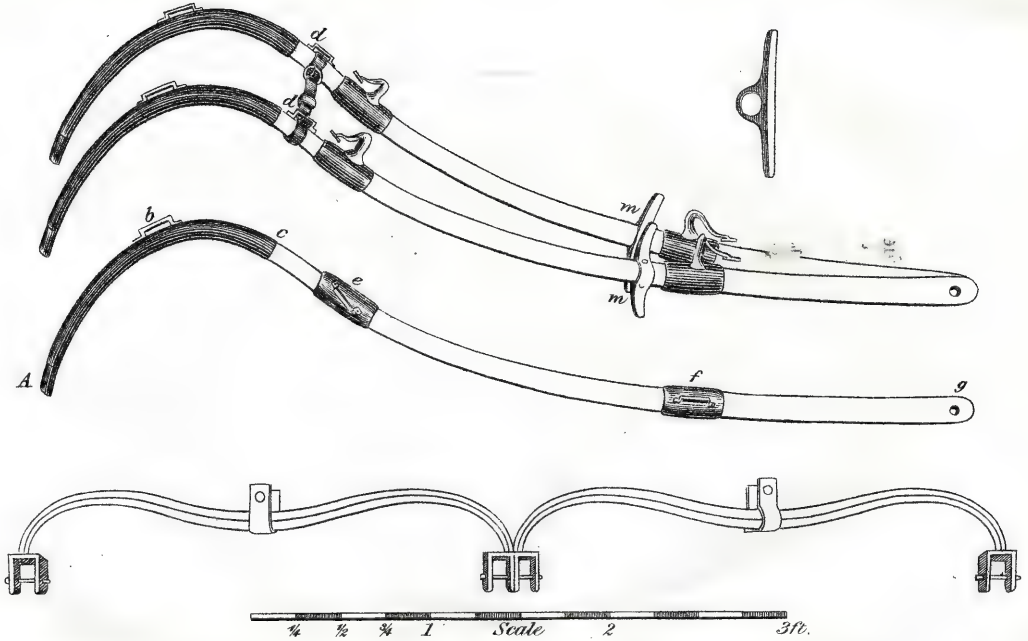
The Princess to whom I refer, attracted by the youthful "whip" on the box, always noticed him with the whip elbow as she rode on the sands, and stopped to watch his various manœuvres amongst the equipages collected there.

I merely refer to the foregoing to shew that at this youthful period instead of being engaged (as so many of my friends in distant parts of the country, who took an interest in my work in after life, suppose I must have been) on the deck of some man-of-war, I was essentially no sailor, but "at home" on the driving-box. And I confess I am glad to avail myself now of any knowledge I may have picked up in early life for a good and useful purpose. It was the delight of my boyish days to discern the character of, and master every horse that came before me, and I can truly say I never failed with one. It has been the business of my after life to learn to read, and through the grace of God to master myself, and to read and to discern, as far as man can do, mankind around me. There was especial necessity for this in the work in which I was so long engaged. How far the aim and desire of youthful days was instrumental in assisting me in the work of riper years, I will not venture to say. But if, in any respect, I can bring the matured judgment of those riper years to bear on the experience of the lad, I will not hesitate to avail myself of it, in the hope of effecting a change,

which I have no doubt will be attended with humane and merciful results.

From this early period I made progress in the art of driving, as every vacation gave me opportunity, for I cannot say that Dr. Gabell gave me much at Winchester College. But this early taste for the reins was soon overruled for, I hope, a good and useful purpose; as almost immediately my attention began to be directed to the methods in use for attaching horses to carriages, both in single and double harness; and the mere matter of driving even then seemed to become a secondary consideration, and to give place to the importance of seeing that my harness was adjusted with such correctness as would not only insure ease to the horses at their work, but safety also to the persons who were to sit behind them. The novelty of driving, which excited the interest of the child at nine years of age, and made him at the age of twelve to fourteen as much "at home" on the box with four-in-hand as with a pair, gave place to these considerations.

In a short time I made some alterations in my shafts and single harness which were attended with great advantage, and attracted considerable attention. I remember stopping at one of the clubs in London one day to see a friend, when a military officer, on my return remarked to me that he thought my horse was the most perfect and beautiful animal he had ever seen in harness; to which I replied, "Alter the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harness on him, and no one will notice him." And so in fact it would have been. If the pad had been put forward nearly on his withers, with the usual accompaniment of a breeching strap passing from the quarters along the horse's side to the shaft-tug, no one would have noticed the horse. I have found the same notice taken of every horse since I first altered my shafts (although I was far from having arrived at their present construction); for the harness is regulated by the shafts. I drove a horse in London into a yard where I had bought him, five years before, of an old dealer. As I drove in, the dealer was in the yard; he stared at the horse, (I thought he had recognized him,) walked round him, and said, "Well, Sir, I don't think I ever saw a horse look so beautiful in harness before." "Well, Mr. Dealer," I said, "when you have done admiring my horse, I shall be glad to ask you a question." "I beg your pardon, Sir," putting his hand to his hat, answered the dealer, "but I really was so taken with the horse, as you drove into the yard, I could not help admiring him. What can I do for you, Sir?" "I only want you, Mr. Dealer," I said, "to tell me *why* you sold me that horse, five years ago, for £22?" "I sold you that horse, Sir? It must be some mistake; I never had the horse." A word or two sufficed to bring to his recollection the circumstances of my purchase, and his astonishment was great as he walked round him again. A friend had

offered me, in the mean time, a hundred guineas for that horse. However, let no young hand run away with the idea that my now improved plan, given in the following pages, is going to convert £22 horses into hundred guinea horses for him! I do not deny that these horses were beautiful in themselves, but if I had driven the same horses with the usual shafts, and harness adjusted accordingly, no one would ever have noticed their beauty. Their fine rising forehands would have been shortened, and their beauty lost, whilst an unnatural length would have been imparted to the quarters of each horse, as will be shewn more particularly in the next chapter.

As time passed on, the evils of the Pole, both in four-wheel work and the Curricle, became so apparent that I determined to make some alteration, and had in my mind what seemed to be calculated completely to remove them: but at this juncture, professional engagements supervened, which called for not only every moment of my time, but every effort both of body and mind. Before many years of my professional life had passed, I found myself launched upon the more than ordinarily arduous work to which I have already referred, and upwards of twenty years afloat occupied in a mission to our seamen on our coast, and working day and night in all weather, winter and summer, from fleet to fleet, left me, it may be imagined, no time for attending to such matters. Indeed, frequently, for months together, I did not see my home, much less horses.

Thus from twenty to thirty years of my life were so completely swallowed up in the cares and labours with which I found myself encompassed in my work, that I could pay no attention to anything which did not immediately concern that work. Having retired however from that extensive field of labour in which I was engaged, and having observed lately the great distress to which the horses in the London omnibus, by the incessant stopping, were subjected *through the use of the pole*, I determined immediately to alter a carriage to the plan which so many years since I was on the point of carrying out; and if I can afford relief to the poor animals thus exposed to unnecessary suffering, I shall be fully compensated for all the trouble I have taken.

Such is a brief account of the progress of my invention for "IMPROVEMENTS IN APPARATUS FOR ATTACHING HORSES TO CARRIAGES," (for which I have obtained protection,) and the circumstances which induced me lately to fall back on my early experience, and give attention to the subject. I have thought it well thus to refer to my early acquaintance with these matters to remove the impression, which the lengthened knowledge they have had of me as altogether afloat, will create in the minds of many—that I cannot possibly know anything of the matter of which I treat; and I deem this the more necessary, as I have sometimes found it almost impossible to persuade men, who knew my work, and only knew me in the work, that I was not originally a sailor.

The fact is, I was thirty-four years of age when I embarked in the undertaking off our coasts, and then in every respect as bad a sailor as could be found; and in the matter of sea sickness, I am sorry to say, continued to be as bad a sailor at the end of twenty years as at the beginning.

The success which has attended my experiment for the relief of horses is as complete as my early anticipations led me to expect. What was prefigured to my mind then I have had actually at work, and it may be seen working on the road now, on the steepest hills, with perfect ease to the horses. I am convinced that, independent of the relief it will afford animals in private carriages, its application to a London omnibus would remove from the books of the company the heavy item of expense occasioned by the wear and tear of horses in the act of being pulled up with heavy loads with the pole. But I leave the reader to judge of this from the following pages.

I am well aware of, and I feel, the position in which I stand in proposing to alter usages which have so long prevailed, and where it may be expected therefore that prejudice has a strong hold; but I rest with confidence on the opinion of practical men when they give their attention to the subject; and with the advantages that will be secured, as well as, to use the language of one whose own equipages pronounce him no bad judge, "the light and handsome appearance" the plan presents, I hesitate not to look for a unanimous verdict.

CHAPTER III.

SINGLE HARNESS; THE EVILS ARISING FROM THE SHAFT AT PRESENT IN USE, AND THE REMEDY PROPOSED.

I NOW proceed to point out the evils arising from the shafts and poles at present in use for attaching horses to carriages in single and double harness, and invite attention to the means by which I propose to remedy those evils; and first, the evils of the shafts.

The evils resulting from the shafts in use at present in single harness are, that from being so long as to bring the pad of the harness almost on the horse's withers, there is a danger in turning of the shaft passing inside the collar and injuring the horse's neck. To avoid this, the shaft is prolonged; then arises the danger of the rein or the bar-bit catching on the point of the shaft, whilst to every observer it will be evident that in turning, the shaft not only presses against the tug of the trace, and defaces both buckle and pipe loop, but pressing against the blade-bone of the horse prevents his turning sufficiently in the shafts to his work, and thus causes

him to go round with considerable difficulty and slowness, in an awkward manner, in fact hobbling round.

Moreover in the shaft at present in use the tug of the back-band which supports the shafts is prevented in going down hill from coming backward, or retreating on the shaft, by a *stop* affixed to the shaft behind it. The effect of this is to carry the tug forward in descending a hill, or "pulling up," and thus cause a very heavy strain by the crupper on the horse's dock, frequently galling it to a great extent, causing at the same time *great pressure on the fore-legs*, from the pad being so far forward.

To obviate these evils, I have constructed short shafts coming only to the horse's waist or middle, and requiring the pad to be placed on the *lowest* part of the horse's back. No part of the rising of the forehand of the horse should be *under* the pad. It should be seen as it were springing from the fore part of it, and the lower the tree fits down on the horse's back, the more it will shew his beauty. The points of these shafts are bent considerably downwards, and slightly outwards. The effect of these is to enable the horse to set more round to his work in turning, having no shaft obstructing him at the bladebone, and to step round accordingly with greater freedom and facility, and to turn in a smaller space, as well as with more ease and rapidity.

And as these shafts cannot touch the trace tugs,

the harness will be saved from being defaced by the shafts, and the leather on the shaft-points from being injured by the tugs; all risk of catching the rein, the bar-bit, or trace round the point of the shaft is also removed, whilst the beauty of the horse (which has always been obscured by the long shaft, which requires the pad to be placed not far from the collar, thus hiding his fine forehand, and giving a length to his back and quarters,) will be brought out conspicuously by the pad being placed on the *lowest* part of the back; then the whole forehand of the horse will stand out to view, and the pad, occupying a middle position between the collar and loin or kicking-strap, will divide the horse into his proper proportions, exhibiting them to the greatest advantage.

Again, these shafts are constructed *without stops*, and with fixtures on the *fore* side of the back-band tugs to receive the belly-band, which is thus attached with billet and buckle on each side of the horse to the shafts *before* the tugs, and is *separate from the tugs* and the rest of the harness altogether, thus leaving the tugs on descending a hill, or stopping, at liberty to ease back on the shaft as the horse drops back, relieving the horse from the heavy strain occasioned by shafts with stops on his dock, and especially on his fore-legs. The breeching is passed round the horse on each side through the kicking strap, and is attached to the *shafts* far enough behind the back-band tugs to allow them plenty of play on the shafts

in going down hill or stopping. It must not come within six inches:—and as the horse in stopping or descending a hill rests against the breeching, the shafts are prevented from being uplifted in the back-band tugs by the belly-band, which should be made *at least* 2½ inches wide in the part that passes under the horse, and it is desirable that the breeching should be made a little wider in the seat than at the points which come to the shafts.

CHAPTER IV.

DOUBLE HARNESS; THE EVILS ARISING FROM THE USE OF THE POLE, AND THE PROPOSED REMEDY, WITH SUMMARY OF THE ADVANTAGES TO BE DERIVED THEREFROM.

I NOW pass on to treat of double harness and the evils resulting from the use of the pole.

In double harness, with the pole in use at present, the greatest care is necessary in turning, where the street or space for turning is narrow. As soon as the carriage is brought to the full lock the danger of the pole breaking (from its length) becomes imminent, especially with large and powerful horses. Hence experienced hands are always seen backing the carriage round where the space is narrow.

By the application of two pairs of the Patent Improved Safety Shafts, instead of a pole (the inner shafts being fitted in a peculiar manner, as described hereafter) to a pair horse carriage, all this difficulty and risk is avoided; the carriage may be turned with ease and safety in a much smaller space than can possibly be done when a pole is used. And, as in single harness, from the horses being unfettered

by the shafts forward, they walk or trot round with much greater freedom and ease.

Another advantage arising from the use of the Patent Improved Safety Shafts, instead of the pole is, that they afford perfect safety from all kickers, inasmuch as each horse is under the same loin or kicking strap he would have in single harness, and which improves the appearance of every horse; whereas, in pole work, there is no contrivance to protect the carriage from a kicker, or prevent him from getting his leg over the bar or trace, but that heavy clumsy mass of straps leading from the pad to the splinter-bar, which no one in these days would be seen with.*

But I now come to the most important evil resulting from the use of the pole. This is THE EXTREME DISTRESS IT OCCASIONS TO THE HORSES, and the wear and tear of "horse-flesh," which is the consequence.

In all private carriages it is the practice to "pole-up" tight. The fact is, the long and heavy pole weighted at the far end with a piece of iron (and it ought to be a bar crossing the pole, as the horses holding back from the pole-*end*, that is, from a centre,

* In my own neighbourhood, the other day, a horse got his leg over the trace; the carriage was upset, and the coachman thrown from the box; two ladies inside the carriage were extricated from their perilous position just in time. This accident could not have happened with my improved apparatus.

are apt to get a bad habit down hill of falling off from the pole); this pole, thus weighted with iron, and chains or heavy pole pieces, if left to dance up and down, would soon tear the fore carriage to pieces. On this account, and for smartness of appearance, as well as that the traces may not be too slack going down hill, it is the practice to "pole-up" tight. It will be evident at once that the weight is transferred by this practice to the unhappy horse's withers, and from the moment he is "put to," to the moment he is taken from the pole, he never loses this weight.

Next observe him at work: from a slight incline to a steep hill, he has this pressing heavier and heavier on his withers, *and on his fore-legs*; and every time he is "pulled up," as his head is powerfully held back by the bits and reins, the animal is caught by the top of the collar on his withers, and the machine, or carriage, with his head thus held back, drags him along, materially distressing his fore-legs, and straining him all over. *This is especially seen in the high and heavily laden omnibus, in London, where the "pulling up," to let passengers down, is unceasing.* If only as a matter of interest, not humanity, such a thing as a pole should not be seen to a carriage.*

The chief wear and tear of "horse-flesh" in the unceasing stopping with a London omnibus arises

* We use poles with wagons for oxen on many of our farms, but even the tough necks of such beasts deserve a contrivance less clownish.

not so much from the starting the vehicle afresh, as from the manner in which the horse is thus strained and tortured by the pressure forward of the vehicle on his withers, dragging him forcibly along, whilst his head is held hard back by the bits and reins.

By the use of the Patent Improved Safety Shafts the horses are saved from the whole of this distress and torture, and the owners the expense arising from the consequent "wear and tear." The horses, in the first place, are relieved from the weight of the pole, and the constant action of it on their necks from every impediment on the road; and in the act of being "pulled up," or stopped, the position is changed from one of distress and torture, to one of, not comparative, but positive ease.

The breeching is adjusted by the loin, or kicking strap, to fit round the widest part of the horse below his tail,* instead of where it is usually carried, low down about his legs, tying up his action, and almost depriving him of the power, when he has a heavy load behind him, on a hill, of getting his hind leg down again to the ground when once he has got it up. The horse thus with unfettered action in his hind legs, on descending a hill, or being "pulled

* There is no greater difficulty in training horses to bear the breeching there, than to suffer the crupper where it is. I always train them to bear the breeching rising close under the tail. It is safe practice, and a week is sufficient to bring any horse to bear it. Most horses you may accustom to it in the stable in two or three days.

up," *places his weight*, as the carriage presses upon him, against the breeching, and in a position of ease, and not distress, checks its course, without any strain on his tail or dock, and without the pressure on his forelegs, occasioned by the pole or the long shafts, the absence of stops on these shafts allowing the back-band tugs to fall back. If the horses in a London omnibus carrying a heavy load could speak, on being thus "pulled up," they would say, "As often as you like, Coachey, this way, only don't pull us up again with that pole by the collar on our necks—it tears us to pieces."

The ease of the horses on a gentle incline, or on descending a hill, with the apparatus of the Patent Improved Safety Shafts is remarkable. Instead of the pole pressing heavily upon their withers, they may be seen trotting along with their collars lightly playing on their necks; in fact just like horses in leader's traces—at such a time having nothing to do but to carry themselves and their harness!

My first experiment with this new apparatus was on the most hilly road I could find from Bath to the city of Wells, twenty miles. I drove two very high spirited horses, 17 hands high, of extraordinary power, only just broke to harness; being the first time also that one of them was tried in double harness. This horse was exceedingly violent at first, and along side a pole must have got his leg over a trace, and in all probability would have kicked

everything to pieces. He was unable to do the smallest damage, and it was a pleasure to see these horses on the steepest hills, as well as on the long gentle inclines, going along with their collars, as before observed, lightly playing on their shoulders, instead of being bored all the way with the constant pressure of the pole resting on their necks. It is difficult to conceive the extent of the injury done also by this pressure to the *fore-legs* of the horses! No one who has seen horses working in these Patent Improved Safety Shafts can doubt for a moment that they would work *better*, and with less injury in this way for twelve years, than along side a pole for six.

Another very important point to be noticed is, that with horses "poled up" tight, all that is not *for* must be *against*. No two horses can step for six paces so evenly and exactly together, and *up to the collar*, as that one shall not with the tight pole piece check the other; or rather that each shall not be constantly checking the carriage they are harnessed to draw. All this is removed by the Patent Improved Safety Shafts, in the use of which the carriage is not subject to a check from either horse if he should not be exactly as hard up to the collar as the other.

Another evil strikingly apparent in the tight pole piece is that the collar is never steady, but always working on the horse's neck. This evil is entirely removed by the plan now submitted to the public.

Again, it is a matter of notoriety the number of horses that are constantly falling under a pole in slippery streets. This is daily occurring with the London omnibus' horses. With the pressure of the pole on the horse's withers, pulling him to the ground, as the other horse and the carriage retain their forward motion, it is difficult for him to recover when he slips; and the unceasing endeavours to keep on his legs in greasy streets under the pressure, strains the animal all over, and occasions almost as serious a loss in the wear and tear of "horse-flesh" to a London Omnibus Company, as the strain put upon their horses by the pole on being "pulled up." This may be observed any day in Oxford street, when the pitching is very greasy.

The liability to fall with the Patent Improved Safety Shafts is so reduced that it is expected much suffering will be removed thereby. Whilst there is an absence of anything like the pole-piece tending to check the horse when he attempts to recover from a slip or stumble, or occasioning him great exertion in effecting that recovery, he has the support of the belly-band attached to his own shafts; and from the two inner shafts being connected by a coupling strap, he gets the support of the horse alongside, directly by the centre of the back where his shaft is upheld. In fact the impetus of the carriage forward, instead of preventing, must accelerate his recovery, as by the breeching the belly-band will be forced

upwards, and with the assistance of the horse alongside it will be scarcely possible for him to come to the ground. Contrary to the case of the pole, the greater the pressure of the carriage on him the more likely he will be to recover. With the pole the pressure is to bring him to the ground; with the Patent Improved Safety Shafts it is uplifting.

The Patent Improved Safety Shafts may also be used with all the foregoing advantages with a postilion, this additional benefit being secured, he will need no guard to his right leg, but may wear the same kind of boot as on the other.

In flat country the breeching may be dispensed with in very light carriages where the bent shafts are used. From the bend of the shafts behind the back-band tugs, the tugs cannot come so far back (with the belly-band properly tight) on the shafts in "pulling-up," as to let the horse come against the carriage. Whilst on gentle slopes, being unfettered by stops, they will have the usual easy play on the shafts, which play, with the position of the pad on the back, will relieve the forelegs. It is desirable, however, with heavy carriages, or where there is much "pulling-up," that breeching should be used.

The curricle, which is at present used with a pole and bright bar, may also have the Patent Improved Safety Shafts applied with equal advantage as in the case of four-wheel carriages. I made an experiment with a curricle, which was attended with the most

complete success. The horses, freed from the distress of the pole on their necks, travelled down the hills with ease, resting against the breeching, the pressure or weight of the shafts being on the back of the horses where the seat of the rider in the saddle would come. I found I could trot down the hills at the rate of twelve miles an hour with greater ease and safety than I could jog my horses down with a pole. In this case my centre shafts were brought into one about two-thirds of the way from the points, and the guards exhibited in plate 2, are unnecessary. For an omnibus, with three horses abreast, the two inner shafts may be formed in a similar manner; it will save room.

The chief advantages, then, arising from these Patent Improved Safety Shafts are these:—

1st. Greater facility and ease in turning.

2nd. No injury to the trace tugs and buckles, or to the leather on the shaft-points.

3rd. No risk of catching the rein or bar-bit, or trace on the shaft-points.

4th. Improved appearance of the horse.

5th. And more important than all, *perfect relief* in descending a hill, or being "pulled-up," *from all strain on the withers, the fore-legs, and the dock, arising from the use of the pole, or of the long shafts with stops.*

6th. Perfect security from kickers in double harness as well as single.

7th. Not the same liability to fall in double harness as with a pole.

I may here subjoin another advantage with which experience has recently made me acquainted. A very violent horse which I had just put in harness fell three times in the slippery streets, in *single* harness through plunging. On each occasion he came down on his side, and each time got up by himself without my servant getting down, and without injuring or damaging anything. The horse was upwards of sixteen hands, and weighed nearly thirteen cwt. On one of these occasions, a horse in the ordinary long shaft, in a brougham, fell close by us and broke the shaft.

The foregoing advantages will be found equally available for heavy work in carts and waggons.

CHAPTER V.

THE BRITISH FOUR-IN-HAND.

NEXT I must call attention to the British Four-in-hand of the past and of the present day.

Notwithstanding railways, travellers are still dependant in many parts of the country on the old four-horse coach, yet it would be almost impossible to exaggerate the absurdity of the apparatus by which the "team" is harnessed or yoked together. The pole, weighty enough at its end before, has now three bars for the leaders, each equipped with steel ends and eyes in the centre, hung upon it. All this is "poled-up" on the wheelers; and, as if this was not sufficient, the moment the leaders spring to their collars the weight of their draught is upon the withers and the fore-legs of the thus entrammelled and enchained wheelers. Let the distance next, of the leaders from the wheelers, and from their work, be noticed, and the whole would present a spectacle of absurdity hardly to be looked for in the interior of Africa. Yet this is what is to be seen still, not only in remote parts of the country connecting railways, but daily in the park in London, in 1862!

Let me now shew the Four-in-hand in my new apparatus of the Patent Improved Safety Shafts, without stops. And first a word as to their appearance. They are very short, bent on an easy sweep according to the pattern I have given, and only reaching to the middle or waist of the horse, allowing his whole fore-hand to stand out to view, unencumbered, and appearing to the greatest advantage. If desired, they may be made of light iron, or they may be made of bright steel, and the bar from which they spring, of the same, the whole presenting a light and elegant appearance. I have had my bar made on a sweep to receive each pair of shafts, according to the patterns given in the plate, and of iron which gives it a light appearance; but the shafts may be fitted to the ordinary pole bar.

I now come to the important point of advantage. From the shafts being so short, and bent downwards at the points, they are altogether out of the way of the trace buckles; therefore to these buckles (which should always be made with leaders' eyes) the leaders may be attached in long traces, but only long enough to leave room for work. Leaders' traces are usually far too long. They need only just room to work clear of the wheelers, for going down hill, if the leaders are gathered up short on an easy trace, the wheelers also drop back as much, and thus the same distance is preserved. The wheelers on this plan, like the leaders, have no weight on their withers or

necks; both are equally free. The draught of the leaders also is to assist and not to distress the wheelers; and in turning, so great is the advantage, that I will undertake to turn a carriage, "four-in-hand," with my apparatus, in the same place where it cannot be turned with safety with a pair of horses with a pole.

CHAPTER VI.

OF THE MATERIAL AND MODE OF CONSTRUCTION OF THE PATENT IMPROVED SAFETY SHAFTS.

I HAVE already offered a suggestion respecting the material of these shafts for persons who wish to have something particularly neat, but for ordinary use they may be made of iron, or of wood and iron combined,* except in the case of two-wheeled carriages, where iron alone would not be proper.

The following are directions for the fixtures on these shafts, and for their length for horses from seventeen hands down.

The shafts are to be covered with leather two feet back from the extreme point *a*.

The belly-band loop must then be fixed so that the back part of the loop *b* may be eight inches from the back of the point leathers *c*, measuring along the top of the bow of the shaft. This will bring the belly-band loop to the right place on the bow, which is of consequence, as from it the length of the shaft is taken.

* I recommend wood and iron combined.

For a horse of seventeen hands, the shaft must measure from the back part of the belly-band loop *b* in a *straight line* on the inside of the shaft, four feet five inches to the bolt hole *g*.

Let a space of three and a-half inches be left on the shaft clear behind the point leathers; then back of that clear space put on a piece of patent leather, four inches long, for the breeching loop *e*.

The patent leather for the kicking strap may also be four inches long; on this fix the loop *f* for the kicking strap, taking care that the back part of the loop is fifteen inches from the centre of the bolt hole *g*.

For a horse of sixteen hands merely take three inches off the shaft at the bolt-hole end, and leave the points and all the leathers and fixtures the same; this shaft will then measure from the back part of the belly-band loop *b*, to the bolt hole *g*, four feet two inches.

For smaller horses lengths in proportion.

In all the lengths given above for shafts it is supposing the futchels to be three inches from the dash-board or body; when the futchels are longer by an inch or two, the shafts of course must be as much shorter.

The shafts must be set twenty-five inches wide in the bow, where they come to the pad on each side.

In cases where dog carts are already fitted with long straight lance-wood shafts, they may be altered

by the removal of the stops, and the proper adjustment of the pad and belly-band, to work on the same principle as in the short bent shafts, affording great relief to the horse's fore-legs, although all the advantages of the short bent shafts cannot be obtained. In constructing a new dog cart I should have the short bent shafts the same as for the outside shafts of a curricle.

In the lengths for shafts given above, the horses are brought to work close to their draught. For those persons who wish them a little further off, an inch or two may be given; and in double harness if the step, or spring, or wheel, should come near the bar, it will be necessary to make allowance for that; but with a bar made on a sweep similar to my own, of which I have given a representation, *h*, in the plate, shafts of the length stated will be sufficient.

An iron mould for the shape which I recommend for the shaft will be sent to each agent or coach-builder who is licensed to make.

The inner shafts in double harness are fitted with a coupling strap between the point and breeching leathers; there should be an iron loop *d* on the top of each shaft for this strap to pass through. The coupling straps should be not less than an inch and a quarter wide; in heavy work at least an inch and half. Good single leather strap will be sufficient. This strap should be buckled as soon as the second

horse is put in his shafts, and should be unbuckled in taking out as soon as the horses are uncoupled.

Besides the coupling strap, the inner shafts are armed each with a guard *m*. This consists of a piece of iron from an inch to an inch and a-half in width. It is firmly attached to the shaft on the outside, or that side which comes next to the adjacent shaft, and should present a flat surface to that shaft. It should extend about three inches above, and the same distance below the shaft, which will make it altogether about eight inches in length, partaking of the form of a segment of a circle, or slightly curved backward; that is being a segment of the circle of which the shaft, from the bolt hole to the point where the guard is fixed, would be the radius. It is to be fixed on the fore-side of the kicking strap where the shafts begin to diverge from each other, and may be thickened in and made very strong on the side of the shaft to which it is attached. Each inner shaft is to be armed with this, and these guards are to be so adjusted to the shafts that the two flat surfaces of iron may meet and work evenly together. The slight curve backward in the guards will make them work together under the action of the horses. Thus each horse will work independent of the action of the other in his own shafts, whilst the guards, in the event of one horse breaking from his trot and plunging in the direction of the other, will prevent the shafts from over-riding each other.

The coupling strap will prevent one guard from over-topping the other, and will at the same time connect and hold the whole apparatus together.

The inner shafts are prepared with hooks for both breeching and kicking straps to receive eyes which are to be buckled on those straps on the inside, the same affording greater facility in "putting-to" on the inside. The inside kicking-strap eye is hooked from behind the horse in the same manner as the inner trace is attached. The inside breeching eye is hooked standing between the horses and immediately before the inner shafts. It is thus reached with ease.

CHAPTER VII.

ON HARNESS, AND "PUTTING TO" WITH THE PATENT IMPROVED SAFETY SHAFTS.

THE pair horse harness which is in use for pole work is so constructed that whatever the length of the horse may be, the pad must always be the same distance from the collar, and in general the tugs are so short that the pad is upon the horse's withers. Let any one observe a stable man, after the collar is on, placing this harness, pad, crupper, breeching, traces, all hanging upon the hames, on his horse, and he will at once perceive it to be a contrivance so clumsy that it is a wonder it has existed so long.

Now in place of this clumsy double harness, with the Patent Improved Safety Shafts instead of a pole in a pair horse carriage, two sets of ordinary single harness are used; and with this advantage, that you can at any moment separate your horses as they stand, and in the same harness put each into a single horse carriage—four or two wheels—phaeton or dog-cart.

This single harness, as is well known, is not bound

up together like the double harness. After the collar, the hames are put on with only the traces hanging to them; then the pad, and loin or kicking strap; the breeching strap, which is very simple, may then be run through the places prepared for it in the loin strap, the whole light and handy. The ordinary pair horse harness may be altered at a trifling expense for the Patent Improved Safety Shafts.

In "putting to" for the first time, to *fit* the harness to the Patent Shafts, let the horse with the pad on the lowest part of his back be placed in the shafts, so as to bring the back band tugs to the highest point of the bow in the shafts, immediately behind the loops or fastenings on the shafts for the belly-band. Then fix the belly-band snug and *tight*, sufficiently so to prevent the shafts rising in the tugs; your horse is then safe. Next, when the tugs hang straight on the pad immediately behind the belly-band, fix the trace *on a tight strain;* and whilst the horse is *hard up to his collar*, adjust the breeching to the shafts, so as to give him just room to work; and whilst your horse is still hard up to the collar, buckle your kicking strap, so as to give him just room to step, but take care that the horse is well up to his collar. A man in my neighbourhood, the other day, with his ordinary break harness thought his kicking strap was buckled very tight, but he did not perceive that his trace was slack, and therefore the horse hard back against the kicking strap, which gave it the appear-

ance of being tight. When he started, the horse kicked everything to pieces. I have no objection to take two of the veriest kickers that can be found—they may be so bad that each must be kept standing on three legs to be "put to"—and as soon as my harness is adjusted in my Patent Improved Safety Shafts, and I have taken the reins, and am on the box, you may let go their feet, and I will drive them with safety in town or country; and more than that, finding that they are subdued and cannot kick, they will, as I have always found to be the case with horses, very soon give up, and make no more attempts at kicking. I have lately had a most remarkable instance of this in a very powerful horse of nearly seventeen hands.

Another imperfection, which will be seen with pair horse harness in general use is, that the strap which connects the pad with the trace is made a *fixture* on the trace, being attached to the tug buckle; and it may constantly be seen therefore, (when a horse is at a tight strain on his collar) dragging backwards from the pad as if the horse was drawing by it, and just the reverse when a horse is going down hill, both of which are incorrect and look bad. With the patent shafts this can never occur, as with the advance of the horses to the collar, the tugs go forward, and as the horses fall back on the breeching, going down hill, they recede, having no stops on the shafts to hinder them. It

might, however, be better adjusted in the ordinary pole harness than we generally see it. It is astonishing how few men that are entrusted on the box with the reins, and the lives of her Majesty's subjects, know anything of "putting to." They seem never to have given the matter the least thought, either for the ease of the horses, or for the safety of the persons conveyed. A moment's consideration, for instance, would have prevented the adoption of the long breeching in single harness, which is now to be seen in almost every brougham and carriage that runs. The object in carrying the strap forward to the *tug* was to prevent the evil arising from the stop on the shaft, by keeping the tug from being forced forward, and bringing a heavy strain on the horse's dock; but every man that has studied the matter at all, must see at a glance that this breeching cannot be put round the horse tight enough to be effectual without binding up the action of the horse. It should be brought to the *shaft*, and then when the horse is at the collar the breeching is eased. In the other case he carries it with him,—to say nothing of the effect of such a strap on the appearance of the horse. Coming as it generally does, in what I can only call a *slip-slop* manner, from low down about the horse's hind legs and rising along his quarters to the tugs, and these again with the pad so far forward as to give him long quarters, is enough to eclipse the beauty of the

handsomest horse that ever stepped in harness. It may be taken as an invariable rule that if a man can fit his harness on his horses, and "put to" correctly, he can drive; but there are plenty of men to be seen driving who know nothing of the other.

This same rule, by the bye, once brought me into a curious dilemma. I was running up to town by one of the old-fashioned mails, when, in the early morning, we stopped a few miles from London for our last change of horses. On getting up on the box seat again, I remarked what a beautiful team we had, but especially on the way they were "put to," and that it was a pleasure to see them after what we had had through the night. I then touched upon some particular points in the way they were "put to," and added, "the fact is, no man could alter a strap throughout the whole with advantage." "Ah," said the coachman, who seemed to be a queer little fellow, but a very good "whip," "so you see that, sir, do you? these are my own horses, and my horse-keepers never alter anything I have fixed. I wish I had heard you speak a little earlier, and I wouldn't have slaved along with those heavy teams I had all night, I'd have had a turn out of you. A man that has made the remarks you have to me, must drive." "Be that as it may, coachman," I answered, "you would not have got me to handle your horses." When we arrived at the General Post Office, the guard having gone in with the bags,

he suddenly handed me the reins to hold, and went in after the guard. We waited till our patience was nearly exhausted. At last he came running out in an excited manner, and calling up to me, "I'll thank you to take them on to Fetter Lane, sir," darted round the corner, disappearing in an instant. "Fetter Lane!" I cried, turning to my fellow-travellers on the roof of the coach behind me, "I am not going to take his horses to Fetter Lane." Here we stopped, all parties getting very impatient. The horses too in the cool of the early morning, 6 o'clock, and being very fresh, having only a few miles into town in the morning and a few out at night to run, and in the highest possible condition, became as impatient as ourselves, and I could hardly keep them together without moving along. In vain, however, did my fellow-travellers urge me to proceed. "I had no ambition," I said, "to be the driver of one of his Majesty's mails,* and still less to take charge of other men's horses." At last they imploringly besought me, under the circumstances, to take the mail on, as we were all there with our luggage. After waiting a considerable time, all the other mails having arrived, and no one appearing, I consented to take the mail on, if they would bear witness to the position in which I was placed. Indeed, many minutes longer I could not have kept the horses together, for after pawing the ground up

* King George IV was on the throne.

under them, they at last began to spring in every direction, and every moment I expected to have my leaders' legs over the traces. Accordingly I started, and coming out of the post-office gates, on the side on which the mails left, I was obliged to pull up, as I knew not whether to turn to the right or to the left. At this moment I had the horses in a maddened state from standing so long in the cold, and looking for the stable. "Which is the way to Fetter Lane?" coming from the man driving the mail from the post-office only brought me up grins from the early morning bystanders. At last seeing a man who had a more respectable appearance than the rest in the crowd which was gathering around, I said, "You see, sir, the state these horses are in—will you tell me which is the way to Fetter Lane?" "To the left,"—and to the left I went, my horses plunging violently. I had only gone the length of the post-office when I had to pull up again, and more fun and grins came from the mob which had followed. "To the right," a voice answered my renewed inquiry for the way. The same voice, I believe, as before. To the right, and I was in the "fair way" for Holborn and Fetter Lane, never before having discovered the inconvenience of being too well acquainted with the art of "putting to"—a piece of information which I took good care for the future in travelling on the box seat to keep to myself; for whatever I might have done as a boy

going to Winchester College, I had no inclination to repeat at the age of nearly thirty.

I was once, but it was when I was quite a child, and before I had the reins in my hand more than two or three times, taken up rather sharply on the road to a distant watering place, at an hotel where we had stopped for luncheon; I was desired to tell the coachman we were ready; not being able to find our coachman, I told the head ostler to let him know that we were ready, and that he might put the horses into the carriages, "Yes, young gentleman," I heard, "I will tell him, but I am afraid if he does, there will not be much room for the ladies." The young gentleman walked off intensely huffed: but I took good care from that day never to let any of them take me up in a similar manner again. It was only the other day, however, that in my own neighbourhood I heard the same order given by one over whom had, evidently, passed some three to four dozen summers and winters; and this to the no small amusement of the men who had to execute the order.

My aim throughout, from very early days, was three-fold; first, so to harness and "put to" as to afford the greatest ease to the horses: second, to secure safety to the persons to be conveyed: and third, to take my horses along the road with the least possible distress. The last of these is of less moment in these days of railway travelling; to secure the former for both horses and all who use

carriages is the object of these pages, and of my Patent.

As I am often asked by friends in my own immediate neighbourhood what I think of the bearing rein, and as it was only the other day I was requested to say a word on the subject at a meeting of the "Society for the prevention of cruelty to Animals," I will take the opportunity, before I close this chapter of offering a remark or two in reference to that appendage to our harness. *For travelling and for all heavy work, I have no doubt it must distress the horse, and is therefore improper.* But in town work, and when high-spirited horses are every day on mere exercise only, I use the bearing rein. It just suffices to keep them from the long distended neck of a snaffle-mouthed horse, which, in the event of any sudden emergency in a crowd, which should suddenly throw the horses on their mettle and on their haunches, would just give the man on the box about a yard of slack rein in his hand in an instant, and that when he most required to have his horses in hand. In short, it just serves to keep them in hand when you stop. My bearing reins are only tight when the horses are standing still; the moment they start, you will see them loose on their necks, and they continue so as long as I am driving them. So much was this the case, that many years ago I found my horses shook the bradoon bits out of their mouths in their playful way of going in harness;

and to prevent this, I adopted the plan which I have continued ever since, of cheek chains attached to the bit and made to hook at the head under the rosette. By means of these the bit is kept hanging in the mouth when the bearing rein is quite slack; and I find it desirable to have the bradoon bit, as it makes a better and more lively mouth; I can also unbear on a steep hill, in travelling, without the bit dropping out of the mouth.

It is, however, to be obsered I only speak of well-bred horses. Those that have no mettle to be drawn out, and which carry their heads down, may be treated as working horses, and should have no bearing reins. It is in vain their owners try to make them otherwise than they are, bearing their heads up; they only distress the poor brutes.

On the subject of winkers, which a certain class of persons affect to despise, I do not feel much inclination to waste either time or space. Their experience must be small, or with nervous high-spirited animals, in a close and crowded city, where you are going along wheels all but touching, they would have discovered their value. The first time an advocate for their disuse is driving a highly nervous and spirited horse, with only three eighths of an inch to spare on one side, and a box or hamper should roll off a city van on the other side, he will find his mistake, and perhaps buy experience at a dear rate. We may do things in open space, or on horseback,

which we cannot afford to do in confined and crowded places, or with wheels following the horses. On many of our very narrow country roads too, with deep ditches on each side, and no protection, the mere fact of a dog jumping up suddenly out of the ditch, at the side of the horse, would be sufficient, with the best "whip" in the kingdom, in *single* harness, to put the carriage into the ditch on the other side. With winkers, the danger would be avoided. The persons who are most frequently to be found declaiming against winkers are those who have no experience of their own, but seize upon it as a novelty, because they have seen some man (who did not think twice) driving without them. It is experience which makes us wise.

The martingal to the nose band appears to me to be a decided error, whether used in harness or in riding, and very dangerous. The check is so sudden with horses that throw up their heads, and they are generally horses of an excitable character, that if the martingal does not give way it is very likely to bring the horse to the ground. In harness there is no necessity for it, and I only bring it to the hames. In riding, if brought to the bradoon rein there will be sufficient restraint, and the danger arising from the sudden check will be avoided.

The breast strap, instead of a collar, should never be used except in the lightest work, when it may be said that the horse has nothing to draw. In propor-

tion to the weight to be drawn, so is the pressure, as the breast piece collapses, on the horse's shoulders and round his vital parts. The ordinary collar *well fitted* will never rub or distress a horse. In long and trying journeys, and upon the worst of mountain roads, I have never had a horse in the slightest degree rubbed by a collar. The whole construction of the horse may be said to be one mass of powerful levers, and in every respect is he wonderfully formed and adapted for man's use. One glance at his shoulder will shew us the place prepared to receive the collar, and where it will not inconvenience him in any degree in his action.

CHAPTER VIII.

A WORD FOR THE HORSE IN THE STABLE.

My "Improvements in apparatus for attaching horses to carriages" and the foregoing description of the plan, have reference to the horse after he has left the stable and is brought to his work. I cannot however refrain from devoting a short chapter to a remark or two on the effects of regularity and cleanliness in the stable, that he may have comfort when his work is over. My remarks must be very few, or my "Little Book" will greatly exceed the infantine dimensions I intended for it, and may perchance reach the bulk of a literary "hobbledehoy," insufficient to aspire to the notice of the grave and philosophic few, and too big to be the companion of other and more practical men.

If horse keepers only studied their own interest, and not the comfort of the animals themselves, they would keep their cattle with the *greatest regularity* and the *most perfect cleanliness*. "Horse flesh" is a dear thing, but to pass the filthy stables we constantly do, one would suppose it must be very cheap.

I was once told by a person who had just built an expensive house, that he would not on any account have stables on the premises, for they brought vermin. There may be some truth in this in such stables as I have just alluded to; but I must say, I should as soon expect to find such things in my drawing-room as in my stables. A horse is a clean animal; a good groom must be a clean man; their stable therefore should be clean. But not only must the stable be kept clean, the animal itself also must be kept clean. Soft soap is cheap, and this frequently used in washing the heels, with the feet also kept very clean, will add much to the comfort of the animal, and will reward the owner for the little extra trouble it will occasion. My practice is to stop the feet *all round* every night, whether the roads are wet or dry. My horses' feet are kept as comfortable thereby, after being pounded on the hard Macadamized roads by day, as if they were upon the cool grass all night. As an incentive to the practice, let me add, nothing will save the horse keeper's pocket more than this practice. I have said "*all round;*" it serves to keep other and heating matter out of the hind feet. All dry stopping should be picked and washed clean out of the feet every morning.

Regularity in feeding is also essential, and I never vary the number of feeds. I feed four times a day, imperial quartern. If I want to lessen a horse's quantity, because he is doing no work, I give less in

each feed; if I desire to increase the allowance because of work, or in the case of a well bred horse still rising, in order to get extra growth forward a year longer in his withers and crest, (and I look upon this as the year which imparts beauty to the horse,) I increase the quantity in each feed, as the case may be, from one quartern up to half peck feeds, or eight quarterns a day; but I never vary the number of feeds. To drop one feed with well bred horses would keep them pawing and fretting, watching every foot-step and movement, and would throw them out of condition more than the subtraction of half their day's allowance, retaining the *number* of feeds.

We hear much of "bruised oats" in the present day. I must say I prefer allowing the horse to bruise them for himself, as I think it promotes digestion. If they are inclined to bolt their corn, a little chaff generally corrects that. But I have scarcely ever failed in bringing horses to eat their corn leisurely. With a young horse never. Let the racks be thoroughly cleared every morning—no hay left lying before the horse—then with every feed let a handful of prime sweet hay be placed along side the corn, and it will be found that the horse will pick at the hay as he eats his corn, and eat it slowly and bruise it.

I wish I could impress it upon every horsekeeper, if only for the sake of the poor horses themselves, that cleanliness and regularity are the essentials for saving money in "horse flesh." I can say I never

had a sick or a lame horse in my life, and I never paid a sixpence to a veterinary surgeon. Yet it has ever been admitted by all who have seen them, that horses in higher condition, or better order in every respect, were not to be found in any stable in the land. I have had two horses shot within a few weeks, one aged, and which I had worked in a heavy carriage for the last nine years, and the other between thirty and forty years old, and which had been in the service of my family from a colt; yet neither, under the treatment he met, had been "sick or sorry" in his life. Shortly before I engaged in my undertaking afloat amongst the fleets, I buried a horse which I had driven in company with others upwards of thirty three thousand miles before I returned with him to England. From the day that I put the collar on him to the last moment, he never complained in any way, but shewed throughout a beautiful coat indicating the highest possible condition. When I obtained him, four years old, he had contracted heels, but in twelve months with constant stopping and careful shoeing I succeeded in producing a good and sound foot. Other horses that I drove shorter distances always maintained the same high health.

Save a bran mash, and a little nitre and flour of sulphur occasionally, physic I keep outside the stable door from the beginning of January to the end of December in each year. For lampas in young horses I find a little common salt rubbed to the roof

of the mouth sufficient, and the same given in milk, for worms, every morning fasting. These trifling things, added to the important daily prescription of cleanliness and regularity, will prove as oil to the wheels, and keep them going without complaining.

I do not by any means intend in the foregoing remarks to disparage the valuable services of our intelligent and respectable veterinary surgeons. I certainly, from the conduct of those I have met with through life, have no reason to do so. I remember, when I was a very little boy, the off horse of a pair of young and very valuable carriage horses, which had been purchased a short time before in London, went lame. He was repeatedly examined by our veterinary surgeon, and as often returned with the answer, that he could not find anything wrong about the horse. At last he was requested to keep the horse for a few weeks, and see if he could discover what it was; and well do I bear in mind his answer,—it was characteristic of the honorable conduct in his profession, for which he was distinguished to the day of his death lately—"If you send him to me," he said, "for five or six weeks, I shall only be picking your pocket. I cannot discover anything wrong about the horse. I should recommend you to drive him down to the Passage House" (an hotel twelve miles off) "as hard as you can. Throw him into a good lather, and have him well taken care of afterwards. If that does not take the lame-

ness off, I do not know what will." I sat on the box, and saw the pair driven down; it was a warm day, and both horses when we arrived at the Passage were in a lather all over. From that day the horse never showed a sign of lameness, and, in the many years he was in our service, proved a most valuable horse, and never had anything whatever the matter with him.

I am sure I may also bear the same high testimony to the veterinary surgeon in whose shoeing forge my horses are now, and have for some years past been, shod.

My remarks are intended to bear upon the abominable system of physicing which prevails in stables, and which no intelligent and respectable veterinary surgeon would sanction.

CHAPTER IX.

THE WRITER'S REASON FOR TAKING OUT A PATENT, WITH SOME REMARKS ON PROTECTION, AND THE PATENT LAWS.

MUCH has been lately said in reference to the law of Patents, and considerable difference of opinion seems to exist on the subject.

A morning paper in reporting a discussion on the patent laws which took place some time since at a meeting in London, attributes to Baron Bramwell the following words:—"People had got into the habit of thinking that men had a right of property in what they either invented or wrote. But no such right existed, and it was entirely a matter of generosity that they secured the emoluments arising from it for a certain number of years. The only right either author or inventor had in what he wrote or invented was the right of keeping it to himself."

But if the inventor should not keep it to himself, believing it will be of great public utility, I should be glad if Baron Bramwell had shewn how he was to get the necessary experiments made without

expense to bring it before the public. I do not find that coach builders, or harness makers, will work for nothing, although I may be willing to give up my time. The idea in the present case had been suggested to my mind, and if I had not worked it out, who would? If, then, from the expense attending the experiments, and from the inability to obtain protection for my invention, I had been induced to abandon it, the benefit, no matter how great, must have been lost to the country. That horses therefore might have relief, especially the poor omnibus horses of London, I have availed myself of my former experience, and at much expense made experiments to bring my plan to perfection; and this being attended with complete success, I have sought protection under the existing patent laws, that so by the payment of a small sum by every one who adopts the plan, I might be reimbursed the expense which I have incurred for the public benefit; and, I must say, I receive this as my just and equitable right, and not, according to Baron Bramwell, as "a matter of generosity" from the public.

I think I can turn to an authority on this subject, than which no better can be adduced. I refer to the case of Whitehouse's patent for tubes, in which "*Lord Brougham*, in giving judgment, expressly stated, that in granting an extension of six years, it was not because the patentee, or owners of the

patent, had not derived large profits, but because other manufacturers had unfairly attempted to obtain possession of the invention before the patent expired, and that they ought to be taught to respect the rights of others."*

A righteous judgment—for no doubt the assignees of the patent were put to considerable expense in defending it against infringement. I confess I do not see much difference, as far as relates to the turptitude of the act, between the man who infringes a patent, and the man who cuts and carries off his neighbour's corn by night; or, as in the case of evasion of patent, cuts it down with his neighbour's own sickle.

But to return for a moment to the subject of protection. How often does an invention spring from the mind of some poor mechanic, and to how many men of small means does the country stand indebted for valuable inventions? How is the poor man, however confident he may feel of success, to work out by models, and other expensive means, his ideas, if he had not before him some prospect at least of being repaid an outlay which runs away with his little all, and leaves him, when he has reached the pinnacle of success, penniless? I do not say that the patent laws need no amendment, for, on the contrary, I think there is great room for improvement; but if people are not to be secured a

* *Vide* "Carpmael on Patents for Inventions."

right of property in their invention on which they have expended both time and means, and no adequate remuneration is to be afforded them, I am afraid the cultivation, if I may so speak, of invention, or the advance of improvement thereby, will last only as long as the cultivation of the fields would by the poor and industrious man when his idle, and perhaps drunken neighbour was permitted by law to walk in and reap the fruit of his labours.

It may be said on the perusal of these pages that the amount of invention here is small. That is true; but the effect is great. The position of the pad on the horse's back, and the belly-band being brought to the foreside of the tugs, which that position will admit of, and being attached to the shafts and not the harness, and the liberty thus given to the tugs to retreat on the shafts, there being no stops to confine them, simple as the combination may be, afford all the ease and safety in single harness described in the foregoing chapters.

By the combination of these advantages again with the arrangement of the inner shafts, and their fixtures, is secured for horses in double harness the ease and advantages, and for the persons to be conveyed by them the security, also set forth in the preceding pages.

Let a brougham with the usual long shafts with stops be noticed waiting on a slight incline. The stops force the tugs of the back-band forward on each

side, and the whole pressure of the carriage with these shafts comes upon the horse's withers and fore legs. Every time the horse is stopped, even upon level ground, the same action may be observed.

With the Patent Improved Shafts, in either case, the horse has not an ounce of weight upon his back. As he *rests* against the breeching the shafts are uplifted, and the pressure is on the under girth or broad belly-band—a steady pressure upwards—supporting him. The very opposite effect to that which is produced by the shafts with stops.

The same effect removes the liability to fall under false step, &c.; and, it may be said, the greater the impetus forward, or pressure of the carriage upon him, the less liability is there of the horse coming to the ground in single as well as double harness.

Simple as the whole may appear to be, it was only after repeated experiments and unceasing toil that the present success was arrived at. I tried the inner shafts repeatedly with the simple construction of the short single harness shaft, or that which forms the outer shaft in double harness; but with large and powerful horses I could not get them to work satisfactorily till I added the guards and coupling strap; and I think it better that these should be used in *every* case. With these, and as the apparatus is now given to the public, the highest spirited and most powerful horses may be driven with safety.

I will only further remark that I trust the inexpensiveness of the plan will prove no small recommendation. In building a new carriage it will add nothing to the expense. In the alteration of one already built the expense will be but trifling.

R. E. Peach, Printer, Bridge Street, Bath.

LIST OF COACH-BUILDERS LICENSED TO MAKE THE PATENT IMPROVED SAFETY SHAFTS.

LONDON:

Messrs. Thrupp and Maberley, 269, *Oxford Street.*

Messrs. Corben and Sons, 30, *Great Queen Street.*

Messrs. Thorn, 19, *Great Portland Street.*

Messrs. Offord, 79, *Wells Street, Oxford Street,* Coach-builders to His Majesty the King of Prussia.

Messrs. H. and A. Holmes, 38, *Margaret Street, Cavendish Square.*

Mr. Grorge Amery, 71, *Upper Berkeley Street, Portman Square, and* 39, *Long Acre.*

Messrs. Wm. Kings and Co., 100 *and* 101, *Long Acre.*

Messrs. C. Lenny and Co., 9, *Park Lane.*

BATH:

Messrs. S. and A. Fuller, *Kingsmead Street.*

Messrs. Vezey, *Milsom Street.*

DUBLIN:

Mr. Robert E. Grady, 38, *Dawson Street.*

Mr. Quan, 10, *Talbot Street.*

CORK:

Mr. Robert Julian, *South Mall.*

CROYDON:

Messrs. C. Lenny and Co.

TWICKENHAM:

Mr. James Mann, Coach-builder to Her Majesty.

DERBY:

Messrs. H. and A. Holmes.

DORCHESTER:

Messrs. Lewer and Co., Coach-builders to His Late Royal Highness The Prince Consort and the Royal Family.

LICHFIELD:

Messrs. H. and A. Holmes, *Bird Street.*

LEAMINGTON:
Mr. Henry Mulliner.
SOUTHAMPTON:
Mr. Alfred John Aslatt, 34, *Above Bar.*
WORCESTER:
Messrs. McNaught and Smith.
NORTHAMPTON:
Mr. Frank Mulliner.
EXETER:
Messrs. George Franklyn and Co.
HASTINGS:
Messrs. Rock and Son.
NOTTINGHAM:
Mr. Thomas R. Starey.

I have the satisfaction of being able to add that, since the foregoing pages were printed, during the few days' hot weather we had lately, my horses travelled cooler than I have ever known them do before. The absence of the pad far forward on the withers, encircling with its girth and belly-band the vital parts of the horse, and the removal of the pressure there occasioned by shafts with stops, allowed my horses to travel unencumbered and cool. The pad resting in that place on the horse's back, which is the last to "break out" in hot weather on under work, leaves the forehand of the horse unfettered; and ease, freedom, and coolness, are observable as the consequence.

ERRATUM.

Fourth line from bottom, for "on under work," *read* "or under work."